

In the Claims.

Please amend the claims as set forth below without prejudice to Applicant filing one or more continuation applications, including without limitation the filing of one or more continuation applications directed to the claims as originally filed.

1. (currently amended) A method for the thermal treatment of a vein using a medical apparatus including an energy delivery device having an optical fiber with and a diffusing light-emitting section, the method comprising the steps of:

inserting said optical fiber ~~having~~ and said diffusing light-emitting section into said vein at a treatment site;

emitting energy ~~into said vein~~ from said diffusing light-emitting section along a first segment of said vein; along a length of said treatment site.

measuring a temperature associated with said first segment of the vein;

comparing said measured temperature with a target temperature; and

moving said diffusing light-emitting section to treat a second segment of said vein in response to said comparison of said measured temperature with said target temperature.

2. (canceled)

3. (currently amended) The method for the thermal treatment of a vein using a medical apparatus according to claim 1, wherein said diffusing light-emitting section is moved in an incremental manner.

4. (currently amended) The method for the thermal treatment of a vein using a medical apparatus according to claim 1 2, wherein said diffusing light-emitting section is moved in a continuous manner.

5. (canceled).

6. (currently amended) The method for the thermal treatment of a lumen using a medical apparatus according to claim 1 5, wherein said optical fiber further comprises a temperature sensor at a distal end thereof, further comprising the steps of:

generating a temperature signal using said temperature sensor; and

utilizing said temperature signal to determine said measured temperature.

7. (currently amended) The method for the thermal treatment of a vein using a medical apparatus according to claim 1 5, further comprising the step of adjusting the rate of movement of said diffusing light-emitting section in response to the temperature measurement.

8. (currently amended) The method for the thermal treatment of a vein using a medical apparatus according to claim 1 7, further comprising the step of adjusting the energy delivered to at least one treatment segment in response to the temperature measurement.

9. (currently amended) A method for the thermal treatment of a lumen using a medical apparatus including an energy delivery device having an optical fiber comprising the steps of:

inserting an optical fiber into said lumen at a treatment site, said treatment site comprising at least two treatment segments;

aligning a light-emitting section of said energy delivery device optical fiber with a first treatment segment within said treatment site;

emitting energy into said lumen at said first treatment segment;

measuring a temperature of said lumen at said first treatment segment;

moving said light-emitting section of said optical fiber to at least a second treatment segment within said lumen;

emitting energy into said lumen at said second treatment segment; and

measuring a temperature of said lumen at said second treatment segment;

wherein the method further comprises the step of reading at least one of said temperature measurements; and wherein the movement of said light-emitting section is in response to at least one of said temperature measurements.

10. (currently amended) The method for the thermal treatment of a lumen using a medical apparatus according to claim 9, wherein said medical apparatus includes a memory device, further comprising the step of comparing at least one of said temperature measurements to a parameter stored in said memory device.

11. (cancelled)

12. (currently amended) The method for the thermal treatment of a lumen using a medical apparatus according to claim 9-11, further comprising the step of adjusting the energy delivered to said treatment segment in response to at least one of said temperature measurements.

13. (currently amended) A method for the thermal treatment of a lumen using a medical apparatus including an energy delivery device having an optical fiber and a memory device comprising the steps of:

inserting optical fiber into a lumen at a treatment site, said treatment site comprising at least two treatment segments;

aligning light-emitting section of said ~~optical fiber~~ energy delivery device with a first treatment segment within said treatment site;

emitting energy into said lumen at said first treatment segment;

measuring a temperature of said lumen at said first treatment segment;

moving light-emitting section of ~~said optical fiber~~ to at least a second treatment segment within said lumen;

emitting energy into said lumen at said second treatment segment; and

measuring a temperature of said lumen at said second treatment segment;

wherein the method further comprises storing a temperature target in a memory device and comparing at least one of said temperature measurements to said temperature target stored in said memory device;

and wherein the method further comprises the step of adjusting the energy delivered to at least one of said treatment segments in response to at least one of said temperature measurements;

wherein said treatment site comprises a multiplicity of treatment segments and said light-emitting section is moved from one treatment segment to another in response to at least one of said temperature measurements.

14. (original) The method for the thermal treatment of a lumen using a medical apparatus according to claim 13, wherein said light-emitting section is aligned with a treatment segment visually using light emitted from a marker laser.

15. (original) The method for the thermal treatment of a lumen using a medical apparatus according to claim 13, wherein said light-emitting section is moved manually.

16. (original) The method for the thermal treatment of a lumen using a medical apparatus according to claim 13, wherein said lumen is a vein.

Claims 17-19 (canceled)

20. (currently amended) The method for the thermal treatment of a lumen using a medical apparatus according to claim 13 ~~18~~, wherein the energy delivered to at least one ~~at the~~ treatment segment is automatically adjusted ~~using a main processor~~.